

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371

459-479P

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/646929

INTERNATIONAL APPLICATION NO.

PCT/DK99/00165

INTERNATIONAL FILING DATE

March 24, 1999

PRIORITY DATE CLAIMED

March 25, 1998

## TITLE OF INVENTION

A METHOD FOR SELECTIVELY GENERATING A FLOW OF GAS FROM AN OPEN END OF A TUBULAR BODY, \*

APPLICANT(S) FOR DO/EO/US

REIPUR, John

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39.
4. ☒ A proper Demand for International Preliminary Examination was made by the 19<sup>th</sup> month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
- a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau). WO 99/48613
- b. ☒ has been transmitted by the International Bureau.
- c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(3)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(2)).
- a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
- b. ☐ have been transmitted by the International Bureau.
- c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
- d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☒ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.-1449 and International Search Report PCT/ISA/210) w/ 1 reference
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.  
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
- 1.) International Preliminary Examination Report (PCT/IPEA/409)
- 2.) PCT Request (PCT/RO/101)
- 3.) Two (2) sheets of Formal Drawings

09/646929

PCT/DK99/00165

534 Rec'd PCT/PTO 25 SEP 2000

459-479P

17. ☒ The following fees are submitted:

**BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5):**

Neither international preliminary examination fee (37 CFR 1.482)  
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO  
and International Search Report not prepared by the EPO or JPO. .... \$970.00

International preliminary examination fee (37 CFR 1.482) not paid to  
USPTO but International Search Report prepared by the EPO or JPO ..... \$840.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO  
but international search fee (37 CFR 1.445(a)(2)) paid to USPTO. .... \$690.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO  
but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$670.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO  
and all claims satisfied provisions of PCT Article 33(1)-(4). .... \$96.00

**ENTER APPROPRIATE BASIC FEE AMOUNT =**

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☒ 30  
months from the earliest claimed priority date (37 CFR 1.492(e)).

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total Claims	23 - 20 =	3	X \$18.00
Independent Claims	2 - 3 =	0	X \$78.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)	None		+ \$260.00

**TOTAL OF ABOVE CALCULATIONS =**

Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity statement  
must also be filed (Note 37 CFR 1.9, 1.27, 1.28).

**SUBTOTAL =**

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30  
months from the earliest claimed priority date (37 CFR 1.492(f)).

**TOTAL NATIONAL FEE =**

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be  
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +

**TOTAL FEES ENCLOSED =**

**CALCULATIONS PTO USE ONLY**

\$ 840.00

\$ 130.00

\$ 54.00

\$ 0

\$ 0

\$ 1024.00

\$ 0

\$ 1024.00

\$ 0

\$ 1024.00

\$ 0

\$ 1024.00

Amount to be:

refunded \$

charged \$

☒ A check in the amount of \$ 1024.00 to cover the above fees is enclosed.

☐ Please charge my Deposit Account. No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ to cover the above fees.  
A duplicate copy of this sheet is enclosed.

☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any  
overpayment to Deposit Account No. 02-2448.

**NOTE:** Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR  
.137(a) or (b)) must be filed and granted to restore the application to pending status.

and all correspondence to:

Birch, Stewart, Kolasch & Birch, LLP or Customer No. 2292  
O. Box 747  
Hills Church, VA 22040-0747  
(303)205-8000

SIGNATURE

CASTELLANO, JOHN A.  
NAME

#35,094 (JAC)  
REGISTRATION NUMBER

September 25, 2000

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: John Reipur  
Appl. No.: New Group: Unassigned  
Filed: September 25, 2000 Examiner: Unassigned  
For: A METHOD FOR SELECTIVELY GENERATING A  
FLOW OF GAS FROM AN OPEN END OF A  
TUBULAR BODY, SUCH AS A HOSE

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

The following preliminary amendments and remarks are respectfully  
submitted in connection with the above-identified application.

AMENDMENTS

**IN THE SPECIFICATION:**

Please amend the specification as follows:

Before line 1, insert --This application is the national phase under 35 U.S.C.  
§ 371 of PCT International Application No. PCT/DK99/00165 which has an  
International filing date of March 24, 1999, which designated the United States  
of America.--

**IN THE CLAIMS:**

Please amend the claims as follows:

Claim 3. (Amended)

Line 1, delete "or 2"

Claim 5. (Amended)

A method according to [any of the claims 1-4] claim 1, wherein liquid is selectively introduced into the open first end part of the tubular body forming a nozzle.

Claim 10. (Amended)

Line 1, delete "or 9".

Claim 13. (Amended)

Line 1, delete "claims 11 or 12" and insert --claim 11--.

Claim 14. (Amended)

An apparatus according to [any of the claims 8-13] claim 8, further comprising a liquid delivery tube opening into the first end part of the tubular body, and means for selectively delivering liquid into the first end part of the tubular body via the delivery tube.

Claim 16. (Amended)

Line 1, delete "or 15".

Claim 17. (Amended)

An apparatus according to [any of the claims 8-16] claim 8, wherein the tubular body is in the form of a hose of a resilient material.

Claim 18. (Amended)

An apparatus according to [any of the claims 8-17] claim 8, wherein the electric motor is a brushless DC-motor.

Claim 19. (Amended)

An apparatus according to [any of the claims 8-18] claim 8, wherein the piston compressor comprises a crank shaft comprising crank sections interconnected with said pistons, adjacent crank sections being flexibly interconnected by a flexible coupling device.

Claim 23. (Amended)

An apparatus according to [any of the claims 20-22] claim 20, wherein a free end of the thread or wire extends transversely into at least one of said opposite ends of the tubular member and is received in a slot or recess formed in the corresponding shaft end.

99/646929

A method for selectively generating a flow of gas from an open end of a tubular body,  
such as a hose

The present invention relates to a method for selectively generating a flow of gas from  
5 an open end of a tubular body, such as a hose.

A conventional system for producing a flow of pressurised air comprises a compressor, a pressure tank to which pressurised air is delivered from the compressor. The function of the compressor is controlled in dependency of the pressure in the tank so  
10 as to maintain the air pressure in the pressure tank substantially at a desired level. Such conventional system comprises air separators and valves which must be able to close tightly.

The present invention provides a method rendering it possible to selectively generate  
15 an air flow in a manner which is much more simple than by using conventional pressurised air systems.

Thus, the present invention provides a method for selectively generating a flow of gas from an open first end of a tubular body, said method comprising connecting a second  
20 end of the tubular body directly to a gas outlet of a gas compressor, starting the operation of the compressor so as to start the gas flow, and stopping the gas flow by stopping the operation of the compressor. This method does neither require the use of a pressure tank, water separators, nor pressure tight valves. Furthermore, a gas compressor having a relatively small capacity can be used as long as the  
25 compressor is able to deliver the desired gas flow.

Therefore, when a gas flow having a predetermined flow rate is desired, the capacity of the gas compressor may be selected so as to obtain the desired gas flow rate through said open free end of the tubular body.

30

In the method according to the invention generation of the gas flow may be started and stopped by starting and stopping the gas compressor. This means that when the compressor is driven by an electric motor, the operation of the electric motor and thereby generation of the gas flow may be started and stopped by actuating an

electric switch. In order to facilitate operation of the compressor such on/off switch for controlling power supply to the electric motor is advantageously positioned on the tubular body at or adjacent to its open first end.

- 5 If the open first end which may, for example, be in the form of a nozzle, is unobstructed the gas flow rate will be substantially constant when the gas compressor is operating. However, the tubular body may comprise a wall part being made from a resilient material. If the open first end of the tubular body is then at least partly closed and subsequently reopened while the compressor is still operating, the resilient wall
- 10 part will be temporarily expanded, whereby a pressure pulse may be generated. This may be helpful in situations where a short, more powerful gas flow is needed.

The open first end of the tubular body may have a valve or a manually operateable obstructing member which may be moved between positions in which the first end of

15 the tubular body is at least partly obstructed and substantially unobstructed, respectively. In the preferred embodiment, however, the wall part defining or being adjacent to the open first end of the tubular body is made from a resilient material. The open first end of the tubular body may then be at least partly closed by compressing said resilient wall part.

20

The first open end may be in the form of or may be connected to a nozzle, and liquid, such as water or an aqueous liquid containing one or more additives may then selectively be introduced into the open first end part of the tubular body or into the nozzle. When a liquid flow is introduced while the gas compressor is inoperative a

25 liquid flow may be generated through the open first end of the tubular body. If liquid is introduced into tubular body when the gas compressor is operating an aerosol flow may be generated.

A flow of gas, liquid or aerosol generated by using the method according to the

30 invention may e.g. be used for blow cleaning any kind of articles, such as electronic articles, and a liquid detergent may then be introduced into the tubular body. Alternatively, the liquid being introduced into the tubular body or nozzle may be a disinfectant. The flow of gas, such as air, the flow of liquid, such as water, and the

flow of aerosol, which may be generated by the method according to the invention is especially suited for use by dentists for cleaning the teeth of a patient.

The present invention also provides an apparatus for selectively producing a gas flow,  
5 said apparatus comprising a gas compressor having a gas inlet and a gas outlet, an electric motor for driving the gas compressor, means for switching the electric motor on and off, and a tubular body having an open first end part and second opposite end part communicating directly with the gas outlet of the compressor, the capacity of the compressor being such that a desired gas flow through the first open end part is  
10 obtained when the gas compressor is operating. The apparatus according to the invention is much more simple and more easy maintain than conventional systems for producing pressurised air

The switching means is preferably positioned on the tubular body at or adjacent to the  
15 open first end of the tubular body so that an operator who is gripping said open first end part may conveniently operate the switching means. The tubular body may comprise at least one resilient wall part and manually operateable means, such as valve means or other obstruction means, may then be provided for selectively closing the open end of the tubular body at least partly. At least the first end part of the  
20 tubular body may be made from a resilient material so that it may be compressed and thereby at least partly closed.

The apparatus according to the invention may further comprise an outer tube section made from a stiff material and surrounding the free first end part of the tubular body.  
25 The manually operateable closing means, such as a pinching device, may then be mounted on this outer tube section. As an example, the switching means may comprise a micro switch embedded in the resilient wall of the free end part of the tubular body. The switching means may then automatically be actuated when the manually operateable means are operated in order to at least partly compress and  
30 close the open first end part of the tubular body.

The apparatus according to the invention may further comprise a liquid delivery tube opening into the free end part of the tubular body, and means for selectively delivering liquid into the free end part of the tubular body via the delivery tube. These liquid



delivery means may comprise a liquid pump and an electric motor for driving the pump and the operation of the electric motor driving the pump may be controlled by switch means which are arranged at or adjacent to the first end part of the tubular body. The said first end part of the tubular body or hose, or said outer tube section may be in the

5 form of a nozzle, or the tubular member or hose may be connected to such nozzle. An operator holding the nozzle in his hand may then conveniently control the function of not only the gas compressor, but also of the liquid pump.

The open end of the liquid delivery tube is preferably directed towards the open end of

10 the tubular body so that a liquid jet leaving the liquid delivery tube may pass further through the open end of the tubular body which may, for example, be in the form of a hose of a resilient material.

The invention will now be further described with reference to the drawings, wherein

15 Fig. 1 is a diagrammatic side view of an embodiment of the apparatus according to the invention.

Fig. 2 is a side view in an enlarged scale of a nozzle formed at the free end of a hose forming part of the apparatus shown in Fig. 1,

Fig. 3 is an end view of the nozzle shown in Fig. 2,

20 Figs. 4 and 5 are sectional views illustrating the function of a manually operateable switching and valve device, and

Fig. 6 is a perspective view of a coupling device.

The drawings illustrate an apparatus or unit for selectively generating a flow of air or

25 gas, a flow of water or another liquid, or both. Such apparatus is suited for use by dentists for cleaning and treating the teeth of a patient.

The apparatus shown in Fig. 1 comprises a piston compressor 10 comprising a suitable number of cylinders. In the present case four cylinders are arranged on either

30 side of a common crank shaft. The shaft of a brushless DC electric motor 11 is connected to the crank shaft, e.g. by means of a coupling device as that described in a Danish patent application (filed at the same time as the present application, our ref. 21121DK1). The manifold tubes 12 of the compressor are connected to a hose 13 having a nozzle 14 formed at its free end. A liquid pump 15 is driven by an electric

motor 16 which may correspond to the electric motor 11, and the outlet of the pump 15 is connected to a tube 17 having a free end opening into the free end or nozzle of the hose 13, vide Fig. 2.

5 The free end of the hose 13 is received in a nozzle tube 18 which may be made from a relatively stiff material, such as metal or plastic, while the hose 13 is preferably made from a resilient, elastic material, such as rubber, silicone or a soft plastic material. The free ends of the hose 13 and of the tube 17 open into the nozzle tube at the free end of the nozzle and as illustrated in Fig. 2. A flexible valve arm or switching  
10 arm is mounted on the outer surface of the nozzle tube 18. An obstruction member 20 extends inwardly from the free end of the arm 19 and is positioned oppositely to a cut-out or opening 21 formed in the nozzle tube 18. The free end of the arm 19 also carries a pair of electric switches 22 and 23 for controlling the function of the electric motors 11 and 16, respectively.

15

When the switch 22 is depressed the electric motor 11 is started so that a flow of air or gas through the hose 13 and out from the opening of the nozzle 14 is generated. The air flow may be stopped by the depressing the switch 22 once again so as to stop the electric motor 11 and the compressor 10. Similarly, a flow of water or another  
20 liquid may be generated by depressing the switch 23 whereby the electric motor 16 is started. It is also possible to depress the switches 22 and 23 at the same time so as to generate a flow of air and water or another liquid. The rate and force of the flows generated correspond to the capacity of the compressor 10 and the liquid pump 15, respectively.

25

However, in some situations the operator or dentist may want to generate a more forceful flow pulse. This may be obtained by applying an increased force to the switch 22 and/or 23 so as to flex the arm 19 inwardly, whereby the obstruction member is passed through the opening or cut-out 21 and locally pinches the hose 13 as best  
30 illustrated in Fig. 4 and 5. When the hose 13 is pinched as illustrated in Fig. 5 and a compressor 10 and/or the pump 15 continue(s) to operate the hose section being upstream of the obstruction member 20 will be elastically expanded. When the operator shortly after releases the switches 22 and/or 23 the arm 19 and the obstruction member 20 return to the starting position shown in Fig. 4. Now the

elastically expanded tube 17 return to its normal position whereby a pressure pulse is generated in the flow of air and/or liquid.

Fig. 6 shows a coupling device 25 for transmission of torque between a pair of substantially aligned shaft ends 26 and 27. The coupling device is in the form of a tubular member made by a helically wound wire, which may, for example, be made of metal or plastic. The opposite end parts of the wound tubular member 25 snugly receive the adjacent shaft ends 26 and 27 therein so that the friction between the outer peripheral surfaces of the shafts and the inner surface of the tubular coupling device may be sufficient to transmit the necessary torque between the shafts 26 and 27. However, in order to increase the torque which may be transmitted, a free wire end 28 at one or at each end of the tubular coupling device 25 may be received in a slot 29 or another recess formed in the shaft 27.

The coupling device according to the invention induces a certain flexibility in the torque transmission. Furthermore, the coupling device 25 may be used also when the shaft ends 26 and 27 are not in complete alignment. This means that the coupling device may be inserted between shaft sections in order to allow increased tolerances. Thus, the crankshaft of the small scale piston compressor 10 may be divided into lengths or sections which are interconnected by flexible coupling devices 25.

The apparatus shown in Fig. 1 may be formed as a hand held unit and may replace much more bulky and space consuming conventional pressurized air systems. The apparatus according to the invention may be made portable or may be built into a unit also containing other kinds of dentist tools and apparatuses.

## CLAIMS

1. A method for selectively generating a flow of gas from a open first end of a tubular body, said
- 5 method comprising
- connecting a second end of the tubular body directly to a gas outlet of a gas compressor,
- which is a piston compressor having a plurality of cylinders, the capacity of the gas compressor
- being selected so as to obtain through said open free end of the tubular body a desired gas flow
- rate being a flow of air used by a dentist for cleaning the teeth of a patient,
- 10 starting the operation of the compressor so as to start the gas flow, and
- stopping the gas flow by stopping the operation of the compressor.
2. A method according to claim 1, wherein the compressor is driven by an electric motor, the
- operation of the electric motor being started and stopped by actuating a switch positioned on the
- 15 tubular body at or adjacent to its first open end so as to control power supply to the electric
- motor.
3. A method according to claim 1 or 2, wherein the tubular body comprises a wall part being
- made from a resilient material, the open first end of the tubular body being at least partly closed
- 20 and subsequently reopened while the compressor is still operating, so as to temporarily expand
- the resilient wall part, whereby a pressure pulse may be generated.
4. A method according to claim 3, wherein the wall part defining the open first end of the tubular
- body or being adjacent thereto is made from a resilient material, the open first end of the tubular
- 25 body being at least partly closed by compressing said resilient wall part.

2

5. A method according to any of the claims 1-4, wherein liquid is selectively introduced into the open first end part of the tubular body forming a nozzle.
6. A method according to claim 5, wherein liquid is introduced into tubular body when the gas compressor is operating.
7. A method according to claim 5, wherein the liquid is sprayed out from the open free end of the tubular body when the gas compressor is not operating.
8. An apparatus for selectively producing a gas flow, said apparatus comprising
- a gas compressor which is a piston compressor having a plurality of cylinders and a gas inlet and a gas outlet,
  - an electric motor for driving the gas compressor,
  - means for switching the electric motor on and off, and
  - a tubular body of the type used by dentists for cleaning teeth, said tubular body having an open first end part and a second opposite end part communicating directly with the gas outlet of the compressor, the capacity of the compressor being such that a desired gas flow through the open first end part is obtained when the gas compressor is operating.
9. An apparatus according to claim 8, wherein the switching means is positioned on the tubular body at or adjacent to the open first end of the tubular body.
10. An apparatus according to claim 8 or 9, wherein the tubular body comprises at least one resilient wall part, manually operateable means being provided for selectively closing the open end of the tubular body at least partly.

3

11. An apparatus according to claim 10, wherein at least the first end part of the tubular body is made from a resilient material.

12. An apparatus according to claim 11, further comprising an outer tube section made from a stiff material and surrounding the first end part of the tubular body, the manually operateably closing means being mounted on the outer tube section.

13. An apparatus according to claims 11 or 12, wherein the switching means comprise a microswitch embedded in the resilient wall of the first end part of the tubular body, the switching means being actuated when the manually operateable means are operated so as to at least partly compress and close the first end part of the tubular body.

14. An apparatus according to any of the claims 8-13, further comprising a liquid delivery tube opening into the first end part of the tubular body, and means for selectively delivering liquid into the first end part of the tubular body via the delivery tube.

15. An apparatus according to claim 14, wherein the liquid delivery means comprise a liquid pump and an electric motor for driving the pump, the operation of the electric motor driving the pump being controlled by switch means arranged at or adjacent to the first end part of the tubular body.

16. An apparatus according to claim 14 or 15, wherein the open end of the liquid delivery tube is directed towards the open end of the tubular body.

17. An apparatus according to any of the claims 8-16, wherein the tubular body is in the form of a hose of a resilient material.

18. An apparatus according to any of the claims 8-17, wherein the electric motor is a brushless DC-motor.

5 19. An apparatus according to any of the claims 8-18, wherein the piston compressor comprises a crank shaft comprising crank sections interconnected with said pistons, adjacent crank sections being flexibly interconnected by a flexible coupling device.

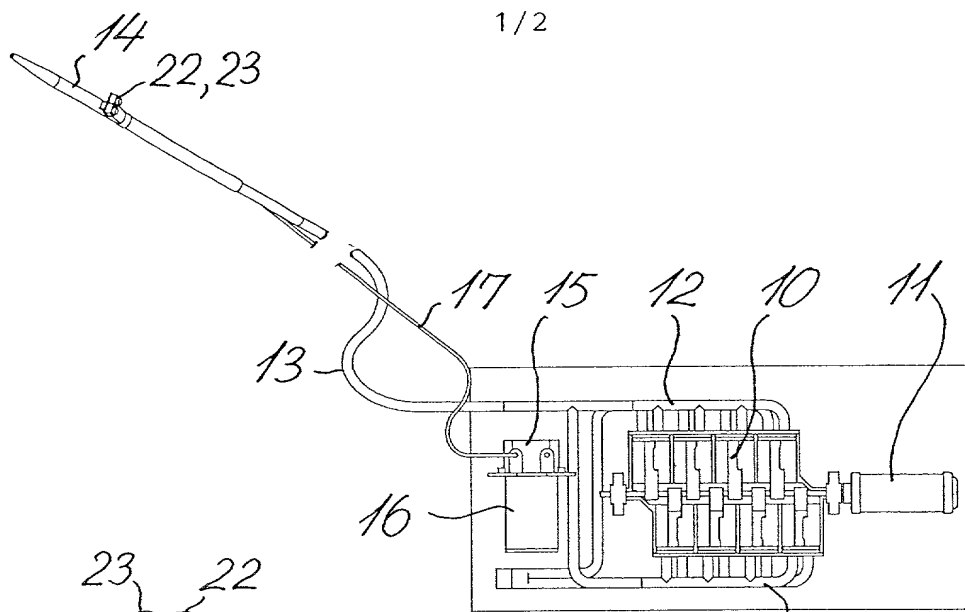
20. An apparatus according to claim 19, wherein the coupling device comprises a tubular  
10 member formed by a helically wound thread or wire, opposite ends of the tubular members being connected to adjacent, substantially aligned shaft ends of said crank sections.

21. An apparatus according to claim 20, wherein opposite open ends of the tubular member are adapted to receive and surround said respective shaft ends.

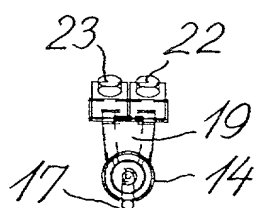
15

22. An apparatus according to claim 21, wherein at least one of the opposite ends of the tubular member is adapted to frictionally engage with the peripheral surface of the respective shaft end.

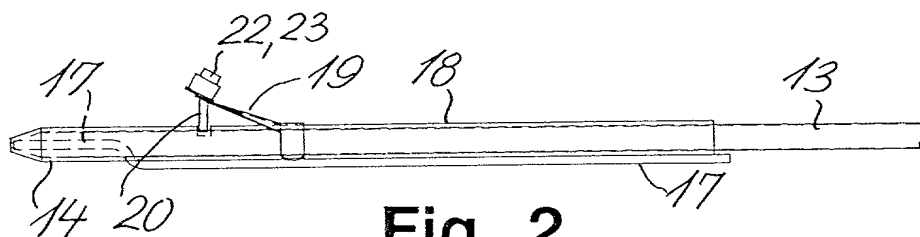
23. An apparatus according to any of the claims 20-22, wherein a free end of the thread or wire  
20 extends transversely into at least one of said opposite ends of the tubular member and is received in a slot or recess formed in the corresponding shaft end.



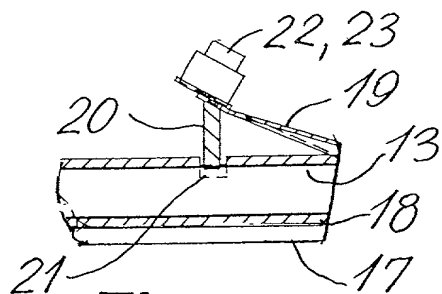
**Fig. 1**



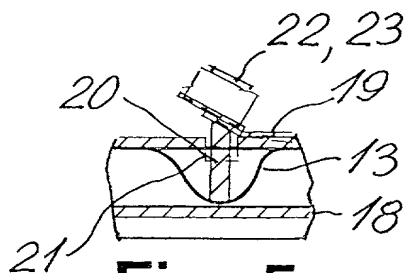
**Fig. 3**



**Fig. 2**

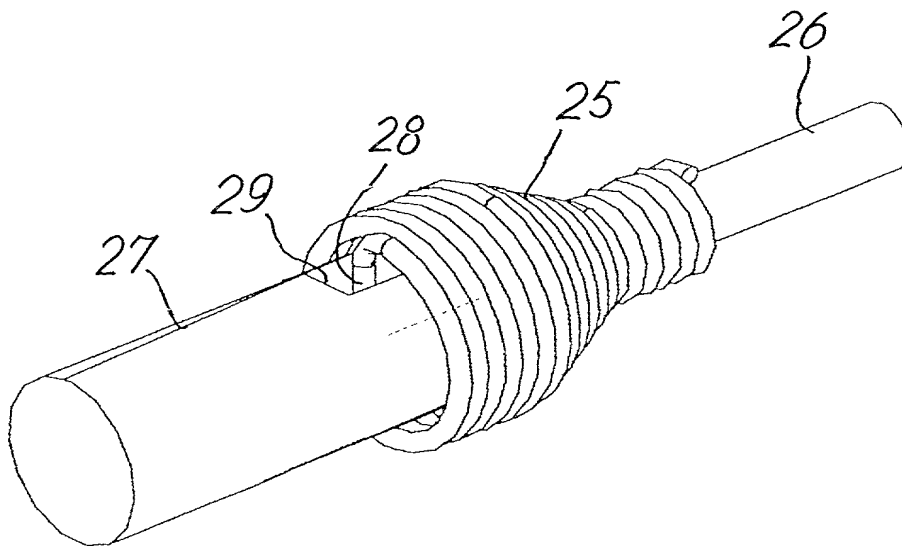


**Fig. 4**



**Fig. 5**



**Fig. 6**

2/11/99 US 1

BIRCH, STEWART, KOLASCH & BIRCH, LLP

P.O. Box 747 • Falls Church, Virginia 22040-0747  
Telephone: (703) 205-8000 • Facsimile: (703) 205-8050

PLEASE NOTE:  
YOU MUST  
COMPLETE THE  
FOLLOWING

COMBINED DECLARATION AND POWER OF ATTORNEY  
FOR PATENT AND DESIGN APPLICATIONS

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated next to my name; that I verily believe that I am the original, first and sole inventor (if only one inventor is named below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Insert Title:

A METHOD FOR SELECTIVELY GENERATING A FLOW OF GAS FROM AN OPEN END OF A TUBULAR BODY, SUCH AS A HOSE

Fill in Appropriate  
Information -  
For Use Without  
Specification  
Attached:

the specification of which is attached hereto. If not attached hereto,

the specification was filed on \_\_\_\_\_ as  
United States Application Number \_\_\_\_\_;  
and amended on \_\_\_\_\_ (if applicable) and/or  
the specification was filed on March 24, 1999 as PCT  
International Application Number PCT/DK99/00165; and was  
amended under PCT Article 19 on \_\_\_\_\_ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I do not know and do not believe the same was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representative or assigns more than twelve months (six months for designs) prior to this application, and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

Insert Priority  
Information:  
(if appropriate)

<u>0428/98</u> (Number)	<u>Denmark</u> (Country)	<u>March 25, 1998</u> (Month/Day/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Month/Day/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Month/Day/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Month/Day/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional applications(s) listed below.

Insert Provisional  
Application(s):  
(if any)

_____ (Application Number)	_____ (Filing Date)
_____ (Application Number)	_____ (Filing Date)

All Foreign Applications, if any, for any Patent or Inventor's Certificate Filed More than 12 Months (6 Months for Designs) Prior to the Filing Date of This Application:

Insert Requested  
Information:  
(if appropriate)

Country	Application Number	Date of Filing (Month/Day/Year)
_____	_____	_____
_____	_____	_____

I hereby claim the benefit under Title 35, United States Code, §120 of any United States and/or PCT application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States and/or PCT application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to the patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Insert Prior U.S.  
Application(s):  
(if any)

_____ (Application Number)	_____ (Filing Date)	_____ (Status - patented, pending, abandoned)
_____ (Application Number)	_____ (Filing Date)	_____ (Status - patented, pending, abandoned)

I hereby appoint the following attorneys to prosecute this application and/or an international application based on this application and to transact all business in the Patent and Trademark Office connected therewith and in connection with the resulting patent based on instructions received from the entity who first sent the application papers to the attorneys identified below, unless the inventor(s) or assignee provides said attorneys with a written notice to the contrary:

Raymond C. Stewart  
Joseph A. Kolasch  
Bernard L. Sweeney  
Charles Gorenstein  
Leonard R. Svensson  
Andrew D. Meikle  
Joe McKinney Muncy  
John W. Bailey  
Gary D. Yacura

(Reg. No. 21,066)  
(Reg. No. 22,463)  
(Reg. No. 24,448)  
(Reg. No. 29,271)  
(Reg. No. 30,330)  
(Reg. No. 32,868)  
(Reg. No. 32,334)  
(Reg. No. 32,884)  
(Reg. No. 35,416)

Terrell C. Birch  
James M. Slattery  
Michael K. Mutter  
Gerald M. Murphy, Jr.  
Terry L. Clark  
Marc S. Weiner  
Donald J. Daley  
John A. Castellano

(Reg. No. 19,382)  
(Reg. No. 28,380)  
(Reg. No. 29,680)  
(Reg. No. 28,977)  
(Reg. No. 32,644)  
(Reg. No. 32,181)  
(Reg. No. 34,313)  
(Reg. No. 35,094)

Send Correspondence to:

**BIRCH, STEWART, KOLASCH & BIRCH, LLP**

or

Customer No. 2292

P.O. Box 747 • Falls Church, Virginia 22040-0747

Telephone: (703) 205-8000 • Facsimile: (703) 205-8050

PLEASE NOTE:  
YOU MUST  
COMPLETE  
THE  
FOLLOWING:

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of First  
or Sole Inventor  
Insert Name of  
Inventor  
Insert Date This  
Document is Signed


Insert Residence  
Insert Citizenship

Insert Post Office  
Address

Full Name of Second  
Inventor, if any  
see above

Full Name of Third  
Inventor, if any  
see above

Full Name of Fourth  
Inventor, if any  
see above

GIVEN NAME/FAMILY NAME John REIPUR		INVENTOR'S SIGNATURE 	DATE* OCT. 6, 2000
Residence (City, State & Country) Klampenborg DENMARK		CITIZENSHIP Danish	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country) Fabritius Alle 17, DK-2930 Klampenborg DENMARK			
GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE	DATE*
Residence (City, State & Country)		CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)			
GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE	DATE*
Residence (City, State & Country)		CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)			
GIVEN NAME/FAMILY NAME		INVENTOR'S SIGNATURE	DATE*
Residence (City, State & Country)		CITIZENSHIP	
POST OFFICE ADDRESS (Complete Street Address including City, State & Country)			

\*DATE OF SIGNATURE